

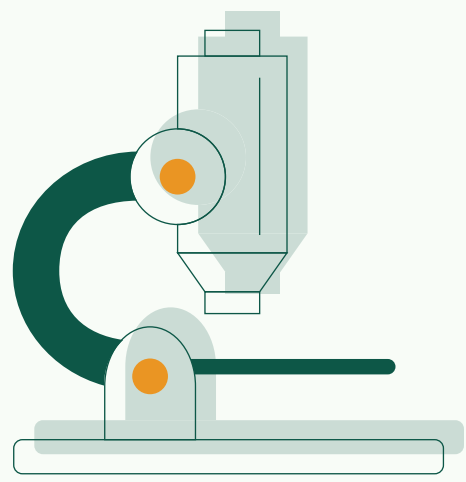
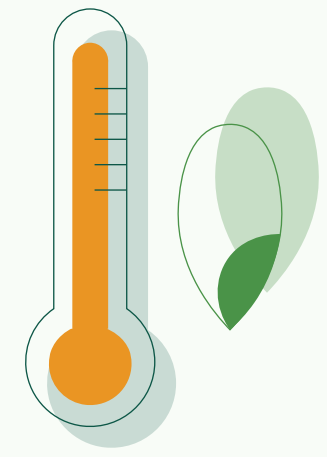
# Seed Health Technology at **Seminis**<sup>®</sup>



*Seed health testing is focused on seed-borne and seed-transmitted diseases. Like diseases in humans and animals, diseases in seeds are caused by microorganisms. In the case of seeds, the microorganisms are present on or inside the seeds.*

## Why do we test our seeds?

We test almost every single lot of seeds for critical pathogens because if the diseases go undetected, they pose a very severe risk to our growers' economic returns.

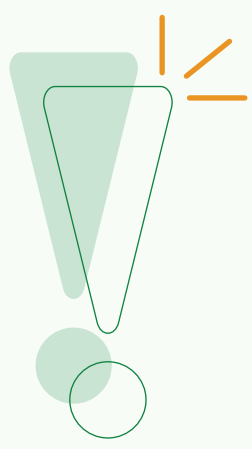
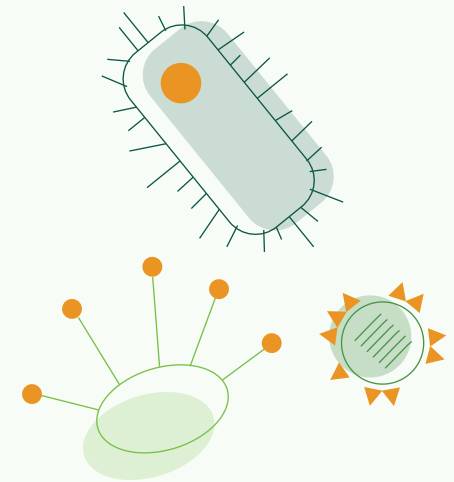


## What do we use to test our seed?

The technology we use ranges from traditional pathology, microbiology and plant biology, to highly sophisticated, advanced technology including molecular assays and whole genome sequencing that allows us to detect the presence of a disease and the threat associated with it.

## What do we test for?

We test for a wide variety of viruses, bacteria, fungi and even some nematodes. We produce 20+ different crops and for each, there is a different set of pathogens we look at.

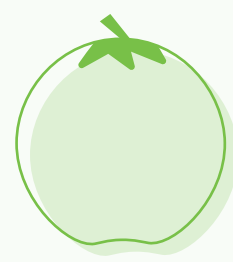
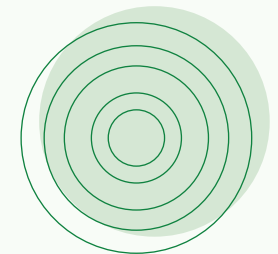


## Plant diseases aren't static.

There are common diseases as well as emerging diseases for any given crop. This is why it's important for us to test those common diseases and, when there's a new emergence, notify industry associations and academic societies of which we are members. Active collaboration across the industry enables us to design the best way to test and manage these threats.

## How do we test our seed?

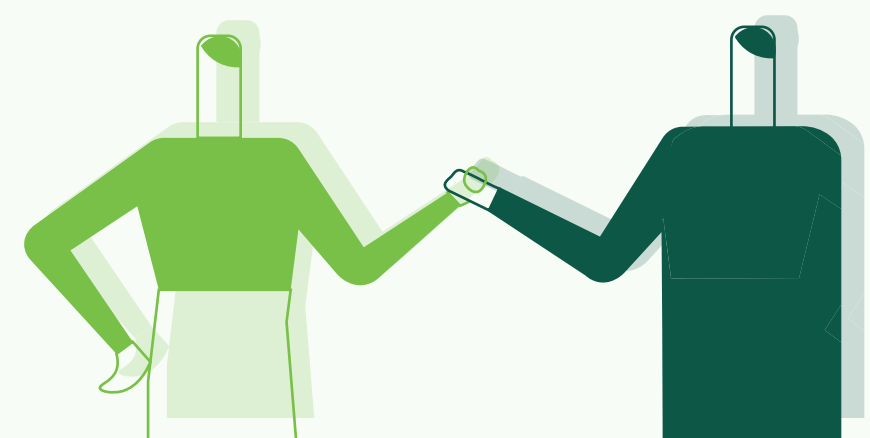
- 1** Our typical workflow starts with a test plan. The test plan uses scientific methods to detect the key seed-borne and seed-transmitted pathogens. Each crop only has a small number of high-risk pathogens and the tests are designed to target those pathogens specifically.
- 2** Our R&D team then develops the testing method using literature reviews, external collaborators, academia or other industry experts to seek out a reliable testing method.
- 3** When the product is harvested, the seed is processed and samples are pulled and sent to the seed health testing lab.
- 4** The lab results are posted, which show the presence or absence of pathogens. Only the seeds that pass our seed health test plans are delivered to our growers.



## Which experts do we collaborate with?

We are participating members of industry associations and academic societies such as:

- The International Seed Health Initiative for Vegetable Crops
- The International Seed Testing Association
- The American Phytopathological Society



## We are committed to seed health testing.

The well-established systems and testing capacity for Seminis<sup>®</sup> seed around the globe make us a seed health leader in the industry. We have testing Centers of Excellence in California and Netherlands, with additional test capabilities in India, China and Thailand. We're also actively committing a significant amount of money to researching and developing new test methods and then publishing those methods. This helps give growers, as well as other in the industry the benefit of managing these diseases with confidence in a more cost-effective way.

